

HIGH-VACUUM VALVE WITH RETRACTABLE VALVE PLATE TO ELIMINATE ABRASION

ABSTRACT OF THE DISCLOSURE

A valve achieves a high-vacuum seal and opens and closes with no sliding or otherwise abrading contact between the sealing plate and the valve seat, while maintaining pressure of the plate against the valve seat in the event of a failure in the valve actuation mechanism. These results are attained by use of a composite valve plate that includes a sealing plate joined to a support block through a retractable resilient connector. During retraction, the sealing plate is drawing close to the block by a pneumatic actuator internal to the composite valve plate, the actuator arranged to oppose and overcome a mechanical resilient element also contained within the valve plate that urges the sealing plate outward from the support block to effect the seal when the actuator is not engaged.

SF 1477568 v1